

**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of

Docket No: Q79580

Toru TSUKADA, et al.

Appln. No.: 10/763,186

Group Art Unit: 3682

Confirmation No.: 6504

Examiner: Chong Hwa KIM

Filed: January 26, 2004

For: FEED SCREW DEVICE

**RESPONSE TO NOTICE OF NON-COMPLIANT APPEAL BRIEF  
UNDER 37 C.F.R. § 41.37**

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

Appellant submits herewith a Response to the *Notification of Noncompliant Reply Brief* dated September 17, 2007. Only the Summary of the Claimed Subject Matter has been submitted, as requested in the Notification, which maps the independent claims 17, 18, 19, 22, 31, 32, 33, 34 and 36 to the drawings, and specification.

Although Applicant believes that no fee is due, the USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

**V. SUMMARY OF THE CLAIMED SUBJECT MATTER**

An exemplary embodiment of the present invention is drawn to a feed screw device that provides lubricant to a screw shaft. Prior feed screw devices have suffered from configurations that are large in size (page 3, lines 8-9); do not provide proper lubrication (page 3, 15-21); and which result in displacement of parts and premature wear (page 3, line 22-page 4, line 6).

The features disclosed in the present specification provide a novel and unobvious configuration that addresses problems in the prior art. Independent claims 17, 18, 19, 20 and 31-34 will be described in regard to the exemplary embodiment of Figures 12 and 13, which were elected in response to the Election/Restriction requirement dated August 9, 2004. However, it is noted that certain features of Figures 12 and 13 are shared with other embodiments, as noted in the specification, and reference may be made to these other embodiments when describing portions of the invention.

Regarding independent *claim 17*, as shown in Figures 12 and 13, a feed screw device is provided having a screw shaft 1 (page 21, lines 18-22; and page 29, lines 15-25; and Figures 12 and 13). A nut member 2 threadably engages an outer peripheral surface of the screw shaft 1 (*Id.*). A lubricant supply device or member 6 is provided that contacts the screw shaft 1 (page 29, lines 22-25; and Figures 12 and 13). A housing member 9 is secured to the nut member 2 and houses the lubricant supply device 6 (page 30, lines 3 and 4; and Figures 12 and 13). The housing member is disposed to project from an axial end surface of the nut member and along an outer circumferential surface of the lubricant supply device (*Id.*) The housing member 9 includes a side that extends radially inward to cover an axial end portion of the lubricant supply

device, the axial end portion of the lubricant supply device faces in the longitudinal direction away from the nut member (Figures 12 and 13). As also shown in Figures 12 and 13, the axial end portion of lubricant supply device (e.g., flat end face of 6 having openings 7) faces in the longitudinal direction away from the nut member 2.

Regarding independent *claim 18*, as shown in Figures 12 and 13, a feed screw device is provided having a screw shaft 1 (page 21, lines 18-22; and page 29, lines 15-25; and Figures 12 and 13). A nut member 2 threadably engages an outer peripheral surface of the screw shaft 1 (*Id.*). A lubricant supply device or member 6 is provided that contacts the screw shaft 1 (page 29, lines 22-25; and Figures 12 and 13). A housing member 9 is secured to the nut member 2 and houses the lubricant supply device 6 (page 30, lines 3 and 4; and Figures 12 and 13). The housing member comprises a cylindrical portion covering an outer circumferential surface of the lubricant supply device, and the outer circumferential surface extends beyond an end face of the nut member (*Id.*) The housing member 9 includes a side that extends radially inward to cover an axial end portion of the lubricant supply device. As also shown in Figures 12 and 13, the axial end portion of lubricant supply device (e.g., flat end face of 6 having openings 7) faces in the longitudinal direction away from the nut member 2.

Regarding independent *claim 19*, as shown in Figures 12 and 13, a feed screw device is provided having a screw shaft 1 (page 21, lines 18-22; and page 29, lines 15-25; and Figures 12 and 13). A nut member 2 threadably engages an outer peripheral surface of the screw shaft 1 (*Id.*). A lubricant supply device or member 6 is provided that contacts the screw shaft 1 (page 29, lines 22-25; and Figures 12 and 13). A housing member 9 is secured to the nut member 2

and houses the lubricant supply device 6 (page 30, lines 3 and 4; and Figures 12 and 13). The housing member includes a cylindrical portion that extends in a direction away from the nut member; an end surface that faces towards the end surface of the nut member; and a side portion opposite the end surface of the housing member that covers an axial end of the lubricant supply device (see Figures 12 and 13). As also shown in Figures 12 and 13, the axial end portion of lubricant supply device (e.g., flat end face of 6 having openings 7) faces in the longitudinal direction away from the nut member 2.

Regarding independent *claim 22*, as shown in Figures 12 and 13, a feed screw device is provided having a screw shaft 1 (page 21, lines 18-22; and page 29, lines 15-25; and Figures 12 and 13). A nut member 2 threadably engages an outer peripheral surface of the screw shaft 1 (*Id.*). A lubricant supply device or member 6 is provided that contacts the screw shaft 1 (page 29, lines 22-25; and Figures 12 and 13). A housing member 9, having a cylindrical portion, is secured to the nut member 2 and houses the lubricant supply device 6 (page 30, lines 3 and 4; and Figures 12 and 13). As shown in Figures 12 and 13, the side of the housing member 9, having the screw holes 16, extends radially inward to cover an axial end portion of the lubricant supply device 6. As also shown in Figures 12 and 13, the axial end portion of lubricant supply device (e.g., flat end face of 6 having openings 7) faces in the longitudinal direction away from the nut member 2.

Regarding independent *claim 31*, as shown in Figures 12 and 13, a feed screw device is provided having a screw shaft 1 (page 21, lines 18-22; and page 29, lines 15-25; and Figures 12 and 13). A nut member 2 threadably engages an outer peripheral surface of the screw shaft 1

(*Id.*). A lubricant supply device or member 6 is provided that contacts the screw shaft 1 (page 29, lines 22-25; and Figures 12 and 13). A retaining ring 9 is fixed to the nut member 2 and stores the lubricant supply device 6 (page 30, lines 3 and 4; and Figures 12 and 13). The retaining ring 9 projects from the nut member and, as shown in Figures 12 and 13, has a side (e.g., side having the screw holes 16) that extends radially inward to cover an axial end portion of the lubricant supply device 6. As also shown in Figures 12 and 13, the axial end portion of lubricant supply device (e.g., flat end face of 6 having openings 7) faces in the longitudinal direction away from the nut member 2.

Regarding independent *claim 32*, as shown in Figures 12 and 13, a feed screw device is provided having a screw shaft 1 (page 21, lines 18-22; and page 29, lines 15-25; and Figures 12 and 13). A nut member 2 threadably engages an outer peripheral surface of the screw shaft 1 (*Id.*). A lubricant supply device or member 6 is provided that contacts the screw shaft 1 (page 29, lines 22-25; and Figures 12 and 13). A retaining ring 9 is fixed to the nut member 2 and stores the lubricant supply device 6 (page 30, lines 3 and 4; and Figures 12 and 13). The retaining ring 9 includes a side that extends radially inward to cover an axial end portion of the lubricant supply device, and the axial end portion of the lubricant supply device faces in the longitudinal direction away from the nut member (Figures 12 and 13).

Regarding independent *claim 33*, as shown in Figures 12 and 13, a feed screw device is provided having a screw shaft 1 (page 21, lines 18-22; and page 29, lines 15-25; and Figures 12 and 13). A nut member 2 threadably engages an outer peripheral surface of the screw shaft 1 (*Id.*). A lubricant supply device or member 6 is provided that contacts the screw shaft 1 (page

29, lines 22-25; and Figures 12 and 13). A retaining ring 9 is fixed to the nut member 2 and stores the lubricant supply device 6 (page 30, lines 3 and 4; and Figures 12 and 13). The retaining ring includes a cylindrical portion that extends in a direction away from the nut member; an end surface that faces towards the end surface of the nut member; and a side portion opposite the end surface of the retaining ring (*Id.*) As also shown in Figures 12 and 13, the axial end portion of lubricant supply device (e.g., flat end face of 6 having openings 7) faces in the longitudinal direction away from the nut member 2.

Regarding independent *claim 34*, as shown in Figures 12 and 13, a feed screw device is provided having a screw shaft 1 (page 21, lines 18-22; and page 29, lines 15-25; and Figures 12 and 13). A nut member 2 threadably engages an outer peripheral surface of the screw shaft 1 (*Id.*). A lubricant supply device or member 6 is provided that contacts the screw shaft 1 (page 29, lines 22-25; and Figures 12 and 13). A retaining ring 9 is fixed to the nut member 2 and stores the lubricant supply device 6 (page 30, lines 3 and 4; and Figures 12 and 13). The retaining ring includes a cylindrical portion that extends in a direction away from the nut member and a side that covers an axial end portion of the lubricant supply device (*Id.*) As also shown in Figures 12 and 13, the axial end portion of lubricant supply device (e.g., flat end face of 6 having openings 7) faces in the longitudinal direction away from the nut member 2.

*Claim 36* recites a feed screw device having a screw shaft 1 (page 21, lines 18-22; and page 29, lines 15-25). A nut member 2 threadably engages an outer peripheral surface of the screw shaft 1 (*Id.*). In accordance with 35 U.S.C. § 112, sixth paragraph, means for supplying a lubricant to the screw shaft 6 is provided to contact the screw shaft 1 (page 29, lines 22-25). In

accordance with 35 U.S.C. § 112, sixth paragraph, means for storing 9 is secured to the nut member 2 and houses the means for supplying the lubricant 6 (page 30, lines 3 and 4). The means for storing 9 includes a side that extends radially inward to cover an axial end portion of the means for supplying the lubricant, and the axial end portion of the means for supplying the lubricant faces in the longitudinal direction away from the nut member (Figures 12 and 13). As also shown in Figures 12 and 13, the axial end portion of the means for supplying the lubricant (e.g., flat end face of 6 having openings 7) faces in the longitudinal direction away from the nut member 2.

The above-noted explanations are provided merely to assist the reader in understanding aspects of the independent claims with regard to exemplary embodiments provided in the present specification and are not intended to limit the claimed invention.

Unless a check is submitted herewith for the fee required under 37 C.F.R. §41.37(a) and 1.17(c), please charge said fee to Deposit Account No. 19-4880.

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Respectfully submitted,



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